**Review of Grade 9 Chemistry**

1. Matter is anything that has \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and takes up \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

2. Classify each of the following properties as either physical (P) or chemical (C):

\_\_\_\_ colour \_\_\_\_ boiling point \_\_\_\_ flash point

\_\_\_\_ flammability \_\_\_\_ malleability \_\_\_\_ solubility

\_\_\_\_ state \_\_\_\_ reaction with water \_\_\_\_ conductivity

3. Match each of the following terms to its definition:

\_\_\_\_\_ compound A. matter made up of only one kind of particle

\_\_\_\_\_ element B. a mixture that looks the same throughout

\_\_\_\_\_ heterogeneous mixture C. a pure substance made from two or more elements

\_\_\_\_\_ homogeneous mixture D. a homogeneous mixture of a substance in a liquid

\_\_\_\_\_ mixture E. a pure substance made from only one kind of atom

\_\_\_\_\_ pure substance F. a mixture in which different parts are visible

\_\_\_\_\_ solution G. a solid forming in a liquid

\_\_\_\_\_ precipitate H. a combination of pure substances

4. Complete the following table:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Atomic Particle** | **Symbol** | **Mass(amu)** | **Charge** | **Location** |
| Proton |  |  |  |  |
|  |  | 1 | 0 |  |
|  |  |  |  | In shells surrounding the nucleus |

5. Complete the following statements.

1. The number of protons in the nucleus of an atom is called the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
2. \_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ contribute nearly all of the mass of an atom (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are relatively light).
3. The **sum** of the number of **protons** and the number of **neutrons** in an atom is the \_\_\_\_\_\_\_\_\_\_\_\_.
4. The number of neutrons is equal to the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
5. The number of electrons in a neutral atom is equivalent to the number of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**REMEMBER:** The **atomic number** identifies an atom as a specific element (i.e. the element with atomic number 6 is ALWAYS **CARBON**, regardless of the number of neutrons and electrons)

6. Complete the following table:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Name** | **Symbol** | **Atomic Number** | **Atomic Weight** | **Number of Protons** | **Number of Electrons** | **Number of Neutrons** |
| Carbon | C | 6 | 12 | 6 | 6 | 6 |
| Sodium |  |  |  |  |  |  |
|  | F |  |  |  |  |  |
|  |  | 1 |  |  |  |  |
| Neon |  |  |  |  |  |  |
|  |  | 13 |  |  |  |  |
|  | Mg |  |  |  |  |  |
|  |  |  | 18 |  |  |  |
| Silicon |  |  |  |  |  |  |

7. Metals may be found on the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ side of the periodic table. While Non-

metals may be found on the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ side of the periodic table. The horizontal

rows of the periodic table are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. The vertical columns of the   
 periodic table are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

8. Distinguish between:

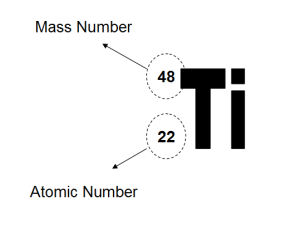
a) a pure substance and a mixture. Provide an example of each.

b) an element and a compound. Provide an example of each.

9. Complete the following table:

|  |  |  |  |
| --- | --- | --- | --- |
| **Compound** | **Names of elements present** | **Number of atoms per element** | **Total number of atoms** |
| CO2 |  |  |  |
| K2CO3 |  |  |  |
| Cu3(PO4)2 |  |  |  |

10. Express the following elements using standard atomic notation.

** a) Copper

b) Magnesium

*Standard Atomic Notation for Titanium*

11. Define the following terms:

a) Chemistry

b) HHPS

c) WHMIS

d) MSDS

e) Valence Shell

f) Valence Electrons

12. Identify the following symbols:

